



STEREO: Organizational Cultures in Conflict

Synopsis

STEREO was the third project in NASA's Solar Terrestrial Probes (STP) Program for studying the Sun–Earth system. Initiated in 1999, STEREO (Solar-Terrestrial Relations Observatory) was slated as a two-year mission scheduled for launch in early 2006. It was designed to provide unique, three-dimensional views of the Sun using two nearly identical space-based observatories in offset orbits, one ahead (STEREO A) of Earth in its orbit, the other behind (STEREO B). Operating simultaneously, they would be able to image events in 3-D.

The project was a collaboration between Goddard and Johns Hopkins University's Applied Physics Laboratory (APL), two organizations with long histories in spaceflight projects but dramatically different organizational cultures. The differences became increasingly evident during the early stages of the project. Eventually friction, mistrust, and confusion over roles and responsibilities threatened to derail the project. Managers, facing political pressure to succeed for the future of the STP program, took creative steps to bridge the gap between a traditionally process-oriented organization (Goddard) and a people-oriented one (APL) and to get the mission back on track.

Purpose

The case of STEREO is a story of an ambitious and programmatically important space-science project running up against daunting organizational culture issues. The learning objectives center primarily on how to deal with cultural differences as identified in a cross-organizational survey that revealed how “culture get in the way of success.” Key learning points are:

- Performance, cost, and schedule may be weighted differently in disparate organizational cultures, leading to difficult-to-manage conflicts.
- Organizations can become “locked into paradigms” that seem irreconcilable.
- Excessive “ownership” and disagreement over management responsibilities can be potentially fatal to a project.
- Managing inter-organizational expectations and relationships is as vital a part of project management as resolving cultural differences and may be critical to mission success.

Discussion

After descriptions of the mission, the spacecraft, and the project organization, the case focuses on the relationship between GSFC and APL. The reader (or workshop participant) is asked to respond to the culture issues and to consider possible resources and actions to overcome “culture shock” (as the project manager would later describe it) and make a productive union out of “a shotgun marriage.”

The comments from GSFC and JPL team members, gathered through the survey, bring the case to life and are effective in stimulating thought and discussion. In addition, a copy of “top-line principles” from an operating agreement between the two organizations, forged during an offsite team retreat held to facilitate interaction, is enlightening. The operating agreement may be used as an epilogue or debrief following the discussion of ideas—to wit, here is how the team jointly decided to resolve its differences and move forward for the good of the project. Quotes from the NASA and APL project managers (below, respectively, and included in the epilogue) are instructive.

- Goddard PM: “In the end, GSFC had to play a more active management role.” A project “should not come down to ‘you’re a contractor’ or ‘you’re a partner.’ It should be what’s best for the project.”
- APL PM: “Before we got there [to a point of open communication], communication was being controlled through a bottleneck at APL—to control the project. We worked really hard to get that communication open, and trust started to be established. One of the ways [we opened communication] was that there were times when we needed a skill set and we went to Goddard and said, ‘Can you provide it?’ We were trying to launch New Horizons [Pluto reconnaissance mission with Goddard] at the same time and we were really stretched. It wasn’t like they were writing negative reports about our skills. That really helped establish the trust.”